

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



May 26, 1994

Ms. Renée Henderson
NREA
Marine Corps Air Station
PSC - Box 8006
Cherry Point, NC 28533-0006

Subject: Site Characterization and Evaluation Report
and Site Cleanup Plan
Sites 1 through 5, Naval Aviation Depot (BRAC Work)
MCAS - Cherry Point, North Carolina

Dear Ms. Henderson:

The North Carolina Superfund Section has reviewed the subject documents. Enclosed are comments for each of the documents.

If you have any questions, I can be reached at (919) 733-2801, extension 244.

Sincerely,

Linda F. Raynor

Linda F. Raynor
Environmental Engineer
NC Superfund Section

cc: Jack Butler
Gena Townsend
✓ Gary McSmith
J. Randall Elder

SITE CHARACTERIZATION AND EVALUATION REPORT
(Comments from NC Superfund Section)

1. **Table of Contents** - Section 4 should be "SITE CONDITIONS" not "SITE ASSESSMENT"
2. **Section 1.1, para. 2** - The final version of the plan was submitted to the Navy on April 1, 1994 ...etc? Is this date correct? (The Work Plan Amendment was dated March 16, 1994.)
3. **Section 1.3** - Sections 4 through 7 are described wrong; ...Section 4.0 presents the site conditions, Section 5 presents the site assessment, Section 6.0 develops the baseline risk assessment, and Section 7.0 provides a summary of the site characterizations.
4. **Section 2.3** - Site Descriptions - For each site, also need to describe its **present** usage; too many acronyms are utilized without explanation (what is motor T, MTIS, I and L, A/C and DED?); For Site 1, the railway spur on the west side of Bldg. 154 (as shown on the topographic map) was not even mentioned; Is there any information on this railway ? For Site 4, where is Building 1857? (no figures I've seen show this building); I thought Site 4 was between Bldgs. 245, 423 and 424; What are the past and present usage of bldgs 423 and 424? Place Bldg. 423 location on figure 3-4; For Site 5, I disagree that information on Bldgs 86 and 246 is not relevant - present information on past and present usage of these bldgs and area between, if known.
5. **Section 3.1** - Were the surficial soils screened with the HNu ? If so, what were the results?
6. **Figures** - Place groundwater flow direction on all figures; On Figure 3-3, locate soil boring 4; On Figure 3-4, locate Bldg 423;
7. **Section 5.0** - SITE ASSESSMENT

General Comment 1:

As stated in the Work Plan (Section 2.0 Sampling Objectives), "The objective of the sampling and analysis effort for CTO 165 is to identify and characterize chemical contaminations in media at five sites slated for construction activities. Planned construction will involve disturbance of surface soil and may facilitate chemical release both during and after excavation. Analytical data obtained for each of the sites will be used to quantitatively assess risk potential to laborers during excavation and construction and to employees possibly exposed after the completion of construction."

Upon review of the proposed Work Plan, several comments were submitted concerning soil sampling activities, several of which particularly stressed the sampling of surficial soils or the soils located immediately below the paved areas. (See EPA's comments in Gena Townsend's letters dated March 8, 1994 (bulleted item #3) and March 21, 1994 (comment #1 (highlighted)) and NC Superfund Section's comments in my letter dated April 5, 1994 (comment #1)).

For the 5 sites addressed, 50 soil borings were performed during this field event. Except for the 2 surface soil samples collected for TCLP and ICR analyses (01-S0-05-0105 and 04-S0-13-0109) and sample 04-S0-07-1525 (which was sampled from 1.5 to 2.5 feet below ground surface because auger refusal was encountered at 2.5 feet), the only discrete soil samples collected were from the depths of 3 to 5 feet or greater. The only other surficial soils collected for analyses were composite samples consisting of 4 to 6 samples which were analyzed for semi-volatiles, pesticides and PCBs. **Therefore, there are no discrete (or composited) surficial soil samples that were analyzed for TCL Volatile Organic Compounds (VOCs), TAL Metals/Cyanide, TPH (low to medium, and high boiling point) and Oil and Grease.**

In order to properly identify, characterize and delineate the extent of contamination and assess the risk potential at these sites, additional investigative sampling and analyses are necessary. As stated above, none of the surface soils have been analyzed for the parameters listed, therefore discrete surficial (proceeding from the ground surface, or in the case where paving exists, from the contact of the paving and the soils) soil samples would need to be collected and analyzed for these missing parameters. Also, since the composite soil sampling performed indicated the presence of contaminants in several areas, (i.e., pesticides at site 1 and PCBs at site 2), further investigative sampling and analyses would also be necessary to properly identify, characterize and delineate the extent of contamination and assess risk potential.

General Comment 2: (regarding tables)

Tables should list background levels for metals in soil and groundwater for comparison purposes.

Tables should also be generated summarizing the following:

- Groundwater sampling results (with the NC Groundwater Standards listed and the exceedances to the groundwater standards denoted in the table);
- Soil sample results for TPH, TCLP and ICR analyses;
- Concrete chip sample results for TCLP and ICR;

Specific Comment (Section 5.3.4; Site 4)

Why did the scope of work performed at this site deviate from the Work Plan, regarding sampling depths and TCLP and ICR soil sampling? (I thought some of the soil samples were going to be collected from depths of approximately 13 feet (they were only collected to 9 feet), and that TCLP and ICR soil sampling was going to be performed near the proposed electrical vault (near 4SB13); instead soils were collected from borings 4SB5 and 4SB6.)

8. Section 6.0 - RISK ASSESSMENT - (Also see attached comments by David Lilley)

Section 6.5.2.3 North Carolina Action Levels for Petroleum -Contaminated Soils

The information in this section is outdated; the most recent guidelines can be found in the document entitled "Groundwater Section Guidelines For The Investigation and Remediation of Soils and Groundwater" dated March 1993 (with June 1993 Revisions incorporated). A copy of this document can be ordered from the NC Dept. of EHNR's Groundwater Section (Phone: (919) 733-8486)

Table 6-10:

Several of the NC Groundwater Standards listed are not correct. The standard for 1,2-Dichlorobenzene is 0.62 mg/l; the standard for 1,4-Dichlorobenzene is 0.075 mg/l, and the standard for Heptachlor epoxide is 4.0×10^{-6} mg/l;

9. Appendix B - Boring Logs - Add Well Point Construction Diagrams (with water table levels indicated on the drawings); Note: Based on the water level measurements obtained in April 1994, it appears that most of the groundwater samples were collected from approximately 3.5-4.5 feet below the water table.

10. Appendix C - Analytical Database - A key should be provided for the abbreviations utilized in the laboratory results such as B, J, U, CRQL, etc. Where are the ICR results for the soil and concrete samples? The metals TCLP analyses sample identified as 04-SO-03-109 in the laboratory data conflicts with the sample log sheet information. (The log sheet for sample 04-SO-13-0109 specifies TCLP and ICR analyses. This may just be a typographical error.)

May 26, 1994

TO: Linda Raynor

FROM: David Lilley

RE: Comments prepared on the Risk Assessment contained in the Site Characterization and Evaluation Report for MCAS, Cherry Point, NC

After reviewing the above mentioned document, I offer the following comments:

1. Page 5-6: It is recommended that tables listing groundwater contaminants (similar to the tables listing soil contaminants) be included in this report.
2. Page 6-3: It is not understood by the reader why the metals in soils were not compared to background concentrations.
3. Page 6-3, section 6.1.1.2: The last sentence makes no sense.
4. Page 6-3: It is unclear to the reader why the groundwater on site 1 will be evaluated only for positively detected organics, and site 4 groundwater will be evaluated only for metals.
5. Page 6-8, section 6.1.2: It is stated that the concentrations to be used for the risk assessment are the maximum detected medium-specific concentrations. That is fine for the discrete samples, but not for the composited samples in this situation. According to Risk Assessment Guidance for Superfund Volume 1, Part A, composited samples can only be used to determine an average concentration. It is recommended that discrete sampling be used, and the 95% Upper Confidence Limit (or the maximum detected concentration, whichever is lower) be used as the exposure concentration. Combining areas where dissimilar types of contaminants are expected to be found dilutes contaminant concentrations. For example, for Sample No. 01-S0-0106, samples are taken over 300 feet from each other, some in oil tank areas, and one in the electric assembly area. This would dilute the PCB concentration. Also, none of the discrete samples were taken on the surface, they were taken at least 3 to 5 feet under the surface of the soil.
6. Page 6-8: If future residential development is not planned or accounted for in the risk assessment, it must be noted on the deed that the area will not be used for residential purposes in the future.

7. Page 6-8, section 6.2.2: Since surface soil contamination has been documented, exposure via the ingestion, dermal, and inhalation routes for long-term exposure must be quantified.
8. Page 6-19, section 6.4 and page 6-33: There is no such thing as "no risk".
9. Page 6-20, section 6.4.2.1: It is stated that exposure by adult employees will be evaluated by ingestion and dermal contact with soil only. Exposure via the inhalation route must also be quantified.
10. Page 6-21, section 6.4.1.2: Since groundwater could be used as a source of drinking water in the future, it is recommended groundwater exposure scenarios be evaluated.
11. Page 6-31, first paragraph: It is stated that "attention should be paid to the target organs affected by each chemical". Describe in further detail how this is to be accomplished.
12. Page 6-31: The risk equation in the middle of the page needs to be used when the risk exceeds 0.01, not 0.1 as listed. Also, the equation given as:

$$\text{Risk} = 1 - [\exp(\text{intake} \times \text{CSF})]$$

should read

$$\text{Risk} = 1 - \exp(-\text{intake} \times \text{CSF}).$$

13. Page 6-35: The site specific health and safety plan, NOT the risk assessment is the appropriate place to address issues such as respiratory protection.

SITE CLEANUP PLAN
(Comments from NC Superfund Section)

General Comment:

The nature and extent of contamination has not been delineated at any of the sites, and the risk assessment is inadequate since it was based on composite sample results rather than discrete surficial soil samples, therefore, a site cleanup plan is premature at this point.

General Comment (regarding health and safety requirements):

(See attached comment prepared by David Lilley)

May 26, 1994

TO: Linda Raynor

FROM: David Lilley

DBL

RE: Comments prepared on the Health and Safety Requirements
section of the Site Cleanup Plan for MCAS, Cherry Point, NC

After reviewing the above mentioned document, I offer the following comments:

1. The Health and Safety Requirements section simply describes, in general, what is required under OSHA. When a site specific Health and Safety Plan is submitted, I would be glad to review it.